

What is claimed is:

1. An array of samples, each sample comprising a component-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:
- (i) the identity of the additional component,
 - (ii) the ratio of the component-in-common to the additional component; or
 - (iii) the physical state of the component-in-common.
2. The array of claim 1, wherein the component-in-common is a pharmaceutical, a dietary supplement, an alternative medicine, or a nutraceutical.
3. The array of claim 1, wherein an amount of the component-in-common is less than about 100 milligrams.
4. The array of claim 1, wherein an amount of the component-in-common is less than about 1 milligram.
5. The array of claim 1, wherein an amount of the component-in-common is less than about 100 micrograms.
6. The array of claim 1, wherein an amount of the component-in-common is less than about 100 nanograms.
7. The array of claim 1, wherein the component enhances solubility or dissolution of the component-in-common.
8. The array of claim 2, wherein the pharmaceutical, the dietary supplement, the alternative medicine, or the nutraceutical is effective for topical, transdermal, intradermal, pulmonary, mucosal, or ocular administration.
9. The array of claim 2, wherein the component is effective to alter a rate of absorption, bioavailability, metabolism, or an other pharmacokinetic or pharmacological

property of the pharmaceutical, the dietary supplement, the alternative medicine, or the nutraceutical.

10. The array of claim 9, wherein the component is a bioadhesive excipient, a bioadhesive coating, an excipient effective to enhance solubility or dissolution of the component-in-common, or an encapsulating agent.

11. The array of claim 1, of at least 24 samples.

12. The array of claim 1, of at least 48 samples.

13. The array of claim 1, of at least 96 samples.

14. A method to measure or detect an interaction between components, comprising:

(a) preparing an array of samples, each sample comprising a component-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

(i) the identity of the additional component,

(ii) the ratio of the component-in-common to the additional component, or

(iii) the physical state of the component-in-common; and

(b) testing each sample for one or more properties.

15. The method of claim 14, wherein the component-in-common is a pharmaceutical, a dietary supplement, an alternative medicine, or a nutraceutical.

16. The method of claim 14, wherein the property is absorption, bioavailability, toxicity, metabolic profile, potency, stability, solubility, dissolution, partitioning, friability, appearance, mouth feel, rate-of-release, rate-of-dispersion, rheology, permeability, compressibility, compactability, flow characteristics, color, taste, or smell.

17. The method of claim 14, wherein testing each sample for the property generates a data set.

18. The method of claim 17, further comprising analyzing the data set to detect or measure the interaction.

19. The method of claim 17, further comprising analyzing the data set to detect a lack of the interaction.

20. The method of claim 14, wherein preparing the array and testing the samples is performed by an automated sample preparation and testing system.

21. The method of claim 19, wherein the data set is analyzed by a computer.

22. The method of claim 14, wherein an amount of the component-in-common is less than about 100 milligrams.

23. The method of claim 14, wherein an amount of the component-in-common is less than about 1 milligram.

24. The method of claim 14, wherein an amount of the component-in-common is less than about 100 micrograms.

25. The method of claim 14, wherein an amount of the component-in-common is less than about 100 nanograms.

26. The method of claim 14, wherein the array comprises at least 24 samples.

27. The method of claim 14, wherein the array comprises at least 48 samples.

28. The method of claim 14, wherein the array comprises at least 96 samples.

29. The method of claim 14, wherein at least 1000 samples are tested per day.

30. A method for testing or optimizing one or more properties of a formulation of an active-component, comprising:

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- (a) preparing an array of samples, each sample comprising the active component and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:
- (i) the identity of the additional component,
 - (ii) the ratio of the active component to the additional component, or
 - (iii) the physical state of the active component;
- (b) testing each sample for at least one property to generate a property-result for each sample; and
- 10 (c) comparing the property-result generated for each sample to a baseline or a control for said property to generate a comparison result for the sample.

31. The method of claim 30, wherein the active component is a pharmaceutical, a dietary supplement, an alternative medicine, or a nutraceutical.

15 32. The method of claim 30, wherein the property is absorption, bioavailability, toxicity, metabolic profile, potency, stability, solubility, dissolution, partitioning, friability, appearance, mouth feel, rate-of-release, rate-of-dispersion, rheology, permeability, compressibility, compactability, flow characteristics, color, taste, or smell.

20 33. The method of claim 30, wherein testing each sample for the property and comparing the property result to a base line or a control generates a data set.

25 34. The method of claim 30, wherein preparing the array and testing the samples is performed by an automated sample preparation and testing system.

35. The method of claim 33, further comprising analyzing the data set by a computer.

36. The method of claim 30, wherein an amount of the active component is less than about 100 milligrams.

37. The method of claim 30, wherein an amount of the active component is less than about 1 milligram.

38. The method of claim 30, wherein an amount of the active component is less than about 100 micrograms.

39. The method of claim 30, wherein an amount of the active component is less than about 100 nanograms.

40. The method of claim 30, wherein the array comprises at least 24 samples.

41. The method of claim 30, wherein the array comprises at least 48 samples.

42. The method of claim 30, wherein the array comprises at least 96 samples.

43. The method of claim 30, wherein at least 1000 samples are tested per day.

44. A system to measure or detect an interaction between components, comprising:

(a) an array of samples, each sample comprising a component-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

(i) the identity of the additional component,

(ii) the ratio of the component-in-common to the additional component;

or

(iii) the physical state of the component-in-common; and

(b) a sample tester to test each sample for one or more properties.

45. The system of claim 44, further comprising a mechanism to direct each sample separately from the array to the sample tester.

46. The system of claim 44, wherein the component-in-common is a pharmaceutical, a dietary supplement, an alternative medicine, or a nutraceutical.

47. The system of claim 44, wherein the sample tester is suitable to test for absorption, bioavailability, toxicity, metabolic profile, potency, stability, solubility, dissolution, partitioning, friability, appearance, mouth feel, rate-of-release, rate-of-

dispersion, rheology, permeability, compressibility, compactability, flow characteristics, color, taste, or smell.

48. The system of claim 44, further comprising an automated preparing and testing system to prepare and test the samples.

49. The system of claim 47, further comprising a computer to analyze the data set.

50. The system of claim 44, wherein an amount of the component-in-common is less than about 100 milligrams.

51. The system of claim 44, wherein an amount of the component-in-common is less than about 1 milligram.

52. The system of claim 44, wherein an amount of the component-in-common is less than about 100 micrograms.

53. The system of claim 44, wherein an amount of the component-in-common is less than about 100 nanograms.

54. The system of claim 44, wherein the array comprises at least 24 samples.

55. The system of claim 44, wherein the array comprises at least 48 samples.

56. The system of claim 44, wherein the array comprises at least 96 samples.

57. An array of samples, each sample comprising a sensory-material-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

- (i) the identity of the additional component,
- (ii) the ratio of the sensory-material-in-common to the additional component; or
- (iii) the physical state of the sensory-material-in-common.

58. The array of claim 57, wherein an amount of the sensory-material-in-common is less than about 100 milligrams.

59. The array of claim 57, wherein an amount of the sensory-material-in-common is less than about 1 milligram.

60. The array of claim 57, wherein an amount of the sensory-material-in-common is less than about 100 micrograms.

61. The array of claim 57, wherein an amount of the sensory-material-in-common is less than about 100 nanograms.

62. The array of claim 57, of at least 24 samples.

63. The array of claim 57, of at least 48 samples.

64. The array of claim 57, of at least 96 samples.

65. A method to measure or detect an interaction between a sensory-material and another component, comprising:

(a) preparing an array of samples, each sample comprising a sensory-material-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

(i) the identity of the additional component,

(ii) the ratio of the sensory-material-in-common to the additional component; or

(iii) the physical state of the sensory-material-in-common; and

(b) testing each sample for a property.

66. The method of claim 65, wherein the property is quality of the odor, substantivity, rate of evaporation, solubility, partitioning, biodegradability, odor, taste, lack of odor, lack of taste, toxicity, potency, texture, color, appearance, partitioning, or physical and chemical stability.

67. The method of claim 65, wherein testing each sample for the property generates a data set.

5 68. The method of claim 67, further comprising analyzing the data set to detect or measure the interaction.

69. The method of claim 67, further comprising analyzing the data set to detect a lack of the interaction.

10 70. The method of claim 65, wherein preparing the samples and testing the samples is performed by an automated sample preparation and testing system.

71. The method of claim 69, wherein the data set is analyzed by a computer.

15 72. The method of claim 65, wherein an amount of the sensory-material-in-common is less than about 100 milligrams.

20 73. The method of claim 65, wherein an amount of the sensory-material-in-common is less than about 1 milligram.

74. The method of claim 65, wherein an amount of the sensory-material-in-common is less than about 100 micrograms.

25 75. The method of claim 65, wherein an amount of the sensory-material-in-common is less than about 100 nanograms.

76. The method of claim 65, wherein the array comprises at least 24 samples.

77. The method of claim 65, wherein the array comprises at least 48 samples.

30 78. The method of claim 65, wherein the array comprises at least 96 samples.

79. The method of claim 65, wherein at least 1000 samples are tested per day.

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80. An array of samples, each sample comprising an agrochemical-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

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- (i) the identity of the additional component,
 - (ii) the ratio of the agrochemical-in-common to the additional component; or
 - (iii) the physical state of the agrochemical-in-common.

81. The array of claim 80, wherein an amount of the agrochemical-in-common is less than about 100 milligrams.

82. The array of claim 80, wherein an amount of the agrochemical-in-common is less than about 1 milligram.

15 83. The array of claim 80, wherein an amount of the agrochemical-in-common is less than about 100 micrograms.

84. The array of claim 80, wherein an amount of the agrochemical-in-common is less than about 100 nanograms.

20 85. The array of claim 80, of at least 24 samples.

86. The array of claim 80, of at least 48 samples.

25 87. The array of claim 80, of at least 96 samples.

88. A method to measure or detect an interaction between components, comprising:

30 (a) preparing an array of samples, each sample comprising an agrochemical-in-common and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:

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- (i) the identity of the additional component,
 - (ii) the ratio of the agrochemical-in-common to the additional component; or
 - (iii) the physical state of the agrochemical-in-common; and

(b) testing each sample for a property.

89. The method of claim 88, wherein the property is biodegradability, potency, solubility, stability, or partitioning.

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90. The method of claim 88, wherein testing each sample for the property generates a data set.

91. The method of claim 90, further comprising analyzing the data set to detect
10 or measure the interaction.

92. The method of claim 90, further comprising analyzing the data set to detect a lack of the interaction.

93. The method of claim 88, wherein preparing the array and testing the samples
15 is performed by an automated sample preparation and testing system.

94. The method of claim 91, wherein the data set is analyzed by a computer.

95. The method of claim 88, wherein an amount of the agrochemical-in-common
20 is less than about 100 milligrams.

96. The method of claim 88, wherein an amount of the agrochemical-in-common
is less than about 1 milligram.

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97. The method of claim 88, wherein an amount of the agrochemical-in-common
is less than about 100 micrograms.

98. The method of claim 88, wherein an amount of the agrochemical-in-common
30 is less than about 100 nanograms.

99. The method of claim 88, wherein the array comprises at least 24 samples.

100. The method of claim 88, wherein the array comprises at least 48 samples.

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102. The method of claim 88, wherein at least 1000 samples are tested per day.

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- (i) the identity of the additional component,
- (ii) the ratio of the component-in-common to the additional component;
or
- (iii) the physical state of the component-in-common.

105. The array of claim 103, wherein an amount of the component-in-common is less than about 1 milligram.

20 106. The array of claim 103, wherein an amount of the component-in-common is less than about 100 micrograms.

107. The array of claim 103, wherein an amount of the component-in-common is 25 less than about 100 nanograms.

108. The array of claim 103, of at least 24 samples.

109. The array of claim 103, of at least 48 samples.

30 110. The array of claim 103, of at least 96 samples.

111. A method to measure or detect an interaction between components, comprising:

- 5 (a) preparing an array of samples, each sample comprising a component-in-common, wherein the component-in-common is an active component of a consumer product formulation or an active component of an industrial product formulation and at least one additional component, wherein each sample differs from any other sample with respect to at least one of:
- (i) the identity of the additional component,
 - (ii) the ratio of the component-in-common to the additional component; or
 - (iii) the physical state of the component-in-common; and
- 10 (b) testing each sample for a property.

112. The method of claim 111, wherein the property is biodegradability, toxicity, potency, solubility; stability, partitioning, compressibility, compactability, odor, lack of odor, or flow characteristics.

15 113. The method of claim 111, wherein testing each sample for the property generates a data set.

20 114. The method of claim 113, further comprising analyzing the data set to detect or measure the interaction.

115. The method of claim 113, further comprising analyzing the data set to detect a lack of the interaction.

25 116. The method of claim 111, wherein preparing the array and testing the samples is performed by an automated sample preparation and testing system.

117. The method of claim 114, wherein the data set is analyzed by a computer.

30 118. The method of claim 111, wherein an amount of the component-in-common is less than about 100 milligrams.

119. The method of claim 111, wherein an amount of the component-in-common is less than about 1 milligram.

120. The method of claim 111, wherein an amount of the component-in-common is less than about 100 micrograms.

5 121. The method of claim 111, wherein an amount of the component-in-common is less than about 100 nanograms.

122. The method of claim 111, wherein the array comprises at least 24 samples.

123. The method of claim 111, wherein the array comprises at least 48 samples.

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124. The method of claim 111, wherein the array comprises at least 96 samples.

125. The method of claim 111, wherein at least 1000 samples are tested per day.

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